

Application Serial No. 10/687,412
Attorney's Docket No.:15468-005001

Amendment to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

Kindly cancel claims 15-21 and 23 without prejudice.

1. (Previously presented) A hydraulic forming process a workpiece using a movable die having a forming section and a fixed die having an accommodating section for fluid, comprising:

filling the accommodating section with fluid wherein the compression ratio of the fluid is not more than 3.0×10^{-5} cm²/kg;

sealing the fluid in the accommodating section by one side of the workpiece;

pressing down the movable die toward the accommodating section of the fluid to increase the pressure of the fluid; and

deforming a part of the workpiece toward a forming space section formed by the forming section of the movable die and the other side of the workpiece.

2. (Canceled)

3. (Previously presented) A hydraulic forming process claimed in claim 1, wherein the viscosity of the fluid is between 100 to 1500 cSt.

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4. (Original) A hydraulic forming process claimed in claim 1, wherein the fluid is a mixture of glycol and water at a predetermined ratio.

5. (Previously presented) A hydraulic forming process claimed in claim 1, wherein the workpiece is formed such that one side thereof is surface-treated and said one side comes in contact with the fluid.

6. (Canceled)

7-10. (Canceled)

11. (Previously presented) A hydraulic forming device comprising:

a lower die having a support section that supports a workpiece placed thereon and a hollow section enclosed by the support section and filled with fluid;

a blank holder that is movable upwardly and downwardly and has a structure to clamp a peripheral edge section of the workpiece with the support section of the lower die;

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an upper die that is movable upwardly and downwardly, has a formed section at its bottom surface and fits into the hollow section of the lower die with the central section of the workpiece having the peripheral edge section clamped by the support section of the lower die and the blank holder;

a valve body installed directly to the lower die;

a check valve installed to the valve body, wherein the check valve allows the flow of the fluid from a hydraulic supply source to the hollow section of the lower die while the check valve seals the fluid filled in the hollow section when the workpiece is formed by the upper die and the lower die; and

a relief valve installed to the valve body, wherein the relief valve is capable of changing a fluid pressure retainable in a path between the hollow section of the lower die and the check valve according to a change-over operation of a relief pressure, the relief valve seals the fluid filled in the hollow section by increasing a relief pressure when the workpiece is formed by the upper die and the lower die, and the relief valve discharges the fluid from the hollow section by decreasing a relief pressure before the upper die is withdrawn from the hollow section of the lower die, after the forming.

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12. (Original) A hydraulic forming device claimed in claim 11, wherein the valve body is provided with a mounting port to which a pressure sensor can be mounted.

13. (Previously presented) A hydraulic forming device claimed in claim 11, wherein the workpiece has one surface having a surface treatment performed thereon and is placed on the support section of the lower die with said one surface brought into contact with the fluid.

14. (Canceled)

15.-21. (Canceled)

22. (Previously presented) A hydraulic forming process claimed in claim 4, wherein the mixed volume ratio of the glycol to water is 9-6 to 1-4.

23. (Canceled)